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PRELIMINARY REPORT ON
EXPLORATION IN THE YELLOW
CAT AREA, GRAND COUNTY, UTAH

By C. M. Mobley

TEM-723

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Trace Elements Memorandum Report 723

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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Dr. Phillip L. Merritt, Assistant Director
Division of Raw Materials
U. S. Atomic Energy Commission
P. O. Box 30, Ansonia Station
New York 23, New York

Dear Phil:

Transmitted herewith are two copies of TEM-723, "Preliminary report on exploration in the Yellow Cat area, Grand County, Utah," by G. M. Mobley, December 1953.

Sincerely yours,

Wright M. Skinner

for W. H. Bradley
Chief Geologist



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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PRELIMINARY REPORT ON EXPLORATION IN THE YELLOW CAT AREA,
GRAND COUNTY, UTAH*

By

C. M. Mobley

December 1953

Trace Elements Memorandum Report 723

This preliminary report is distributed
without editorial and technical review
for conformity with official standards
and nomenclature. It is not for public
inspection or quotation.

* This report concerns work done on behalf of the Division
of Raw Materials of the U. S. Atomic Energy Commission.

USGS - TEM-723

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ILLUSTRATION

Figure 1. Map of the Yellow Cat area, Grand County, Utah In envelope

PRELIMINARY REPORT ON EXPLORATION IN THE YELLOW CAT AREA,
GRAND COUNTY, UTAH

by C. M. Mobley.

INTRODUCTION

The Yellow Cat area is about 10 miles southeast of Thompson, Grand County, Utah, and is principally in the southern part of T. 22 S., R. 22 E., and the northern part of T. 23 S., R. 22 E., Salt Lake meridian (fig. 1). The area is accessible by two graded roads which leave U. S. Highway 50 at two points, one, 5 miles east of Thompson and the other, 7 miles west of Cisco, Utah. Altitudes in the Yellow Cat area range from about 4,600 to 5,300 feet.

Production of uranium-vanadium ore in the Yellow Cat area from 1935 through July 1953 totaled about 32,500 short tons that averaged about 0.25 percent U_3O_8 and 1.5 percent V_2O_5 . The production prior to 1935 was very small. The United States Vanadium Co. maintains a sampling plant and purchasing depot at Thompson.

Between October 9, 1951, and November 25, 1953, the Geological Survey explored the Yellow Cat area by diamond and wagon drilling to find uranium-bearing deposits that would make new mines and to get a better appraisal of the uranium reserves in the area. In addition, several hundred holes were drilled to test the relationship between geobotanical guides and mineralized ground (Cannon, 1951). About 95 percent of the explored area is covered by private claims and school sections; the remaining 5 percent is public land. Other drilling, done by private industry and the U. S. Bureau of Mines, as well as the general geology and the general habits and distribution of the mineral deposits in the Yellow Cat area have been described (Alvord, 1952; and Okerlund, 1953). The results of Geological Survey drilling are summarized briefly in this report.

GEOLOGICAL SURVEY EXPLORATION

Between October 9, 1951, and November 25, 1953, the Geological Survey completed 940 diamond-drill holes, totaling 135,445 feet, and 726 wagon-drill holes, totaling 54,973 feet, in the Yellow Cat area (fig. 1). This drilling was done during five separate drilling contracts; the general plans and results of exploration completed during the first four contracts have been reported (Alvord, 1952; and Okerlund, 1953).

During the fifth contract, 321 diamond-drill holes, totaling 45,280 feet, were completed between July 13 and November 25, 1953. About 250 of these holes were drilled in the western part of the Yellow Cat area and the remainder in the north-central part of the area in, and adjacent to, the McCoy group of claims (fig. 1). About 10 percent of the holes drilled under this contract were widely spaced to obtain geologic information, 25 percent were moderately spaced to search for deposits, and 65 percent were closely spaced. About one-third of the close-spaced holes were drilled to outline deposits and the other two-thirds to test ground containing selenium-indicator and uranium-accumulator plant assemblages (Cannon, *op. cit.*). One-half of the holes drilled to test ground containing the indicator and accumulator plants were drilled in, and adjacent to, the McCoy group of claims. The other one-half of the holes drilled for this purpose, plus all of the remainder of the holes drilled under this contract, were drilled in the western part of the Yellow Cat area.

As a result of the Geological Survey drilling in the Yellow Cat area, about 158 deposits have been discovered. Most of them are in the western part of the Yellow Cat area. Of the 402 holes drilled in mineralized rock, 103 are in material 1 foot or more thick containing 0.10 percent or more U_3O_8 or 1.0 percent or more V_2O_5 .

RESERVES

A preliminary estimate of the indicated and inferred reserves found by Geological Survey drilling in the Yellow Cat area is about 50,000 short tons averaging about 0.25 percent U_3O_8 and 1.5 percent V_2O_5 .

These reserves include only material in layers 1 foot or more thick containing 0.10 percent or more U_3O_8 or 1.0 percent or more V_2O_5 . The reserves are in deposits that range from about 50 to 10,000 short tons each. The reserves are almost entirely in the western part of the area in private land.

PLANS

No further drilling is planned for the Yellow Cat area until a complete appraisal is made of the drilling and other work that has been done. This appraisal will be completed during the winter of 1953-54. If more drilling is justified, as a result of this appraisal, it will likely be scheduled to start in the spring of 1954.

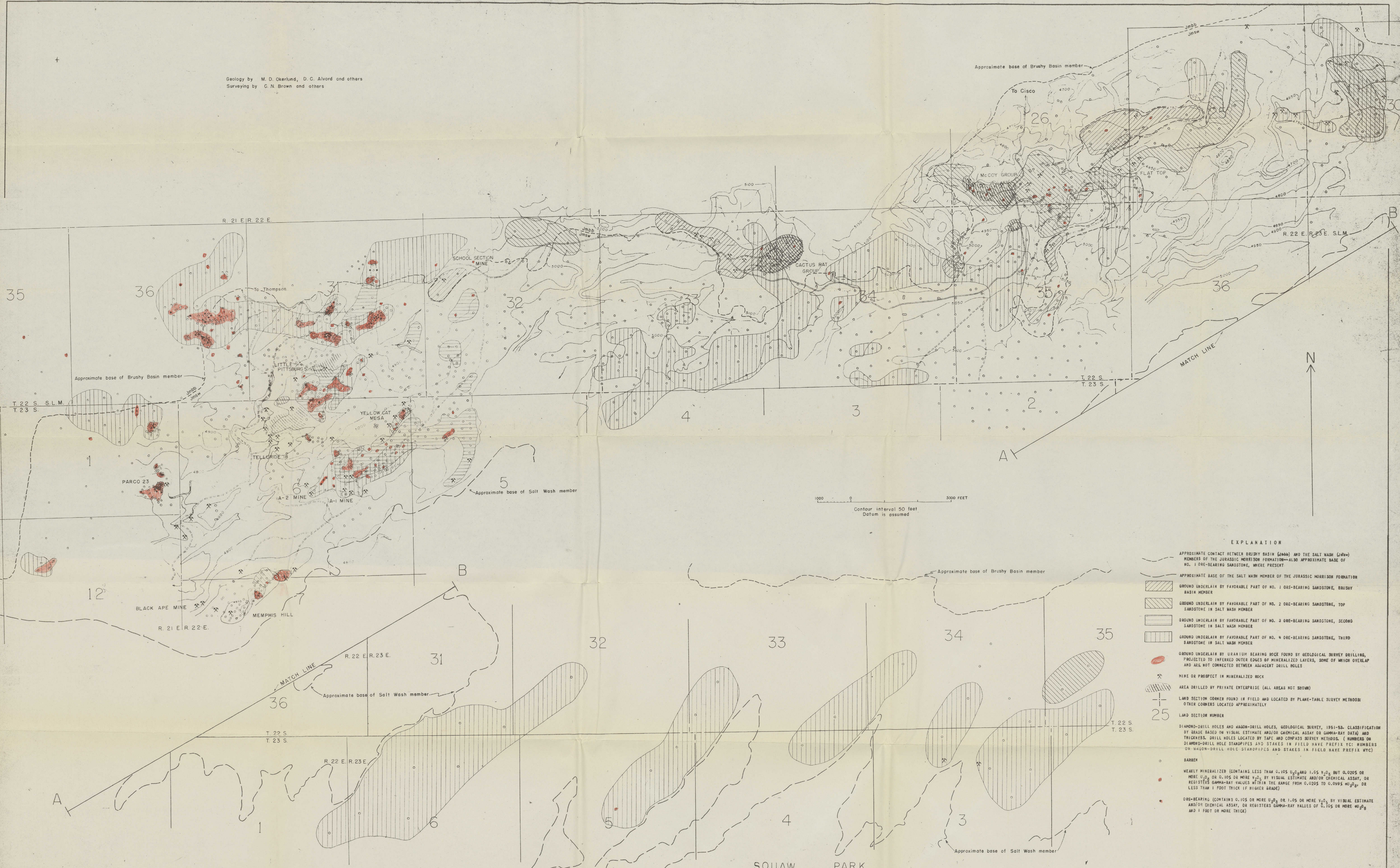
UNPUBLISHED REPORTS

Alvord, D. C., 1952, Interim report on exploration in the Yellow Cat area, Grand County, Utah: U. S. Geol. Survey Trace Elements Memo, Rept. 352.

Cannon, H. L., 1951, Preliminary report on geobotanical exploration in the Yellow Cat district, Grand County, Utah: U. S. Geol. Survey Trace Elements Memo, Rept. 273.

Okerlund, M. D., 1953, Interim report on exploration in the Yellow Cat area, Grand County, Utah: U. S. Geol. Survey Trace Elements Memo, Rept. 582.

Geology by M. D. Okerlund, D. C. Alvord and others
Surveying by C. N. Brown and others



- EXPLANATION**
- APPROXIMATE CONTACT BETWEEN BRUSHY BASIN (Jmbb) AND THE SALT WASH (Jmhw)
 - MEMBERS OF THE JURASSIC MORRISON FORMATION—ALSO APPROXIMATE BASE OF NO. 1 ORE-BEARING SANDSTONE, WHERE PRESENT
 - ▨ GROUND UNDERLAIN BY FAVORABLE PART OF NO. 1 ORE-BEARING SANDSTONE, BRUSHY BASIN MEMBER
 - ▨ GROUND UNDERLAIN BY FAVORABLE PART OF NO. 2 ORE-BEARING SANDSTONE, TOP SANDSTONE IN SALT WASH MEMBER
 - ▨ GROUND UNDERLAIN BY FAVORABLE PART OF NO. 3 ORE-BEARING SANDSTONE, SECOND SANDSTONE IN SALT WASH MEMBER
 - ▨ GROUND UNDERLAIN BY FAVORABLE PART OF NO. 4 ORE-BEARING SANDSTONE, THIRD SANDSTONE IN SALT WASH MEMBER
 - GROUND UNDERLAIN BY URANIUM BEARING ROCK FOUND BY GEOLOGICAL SURVEY DRILLING, PROJECTED TO INFERRED OUTER EDGES OF MINERALIZED LAYERS, SOME OF WHICH OVERLAP AND ARE NOT CONNECTED BETWEEN ADJACENT DRILL HOLES
 - ⊗ MINE OR PROSPECT IN MINERALIZED ROCK
 - ⊗ AREA DRILLED BY PRIVATE ENTERPRISE (ALL AREAS NOT SHOWN)
 - ⊕ LAND SECTION CORNER FOUND IN FIELD AND LOCATED BY PLANE-TABLE SURVEY METHODS; OTHER CORNERS LOCATED APPROXIMATELY
 - 25 LAND SECTION NUMBER
 - DIAMOND-DRILL HOLES AND WAGON-DRILL HOLES, GEOLOGICAL SURVEY, 1951-53. CLASSIFICATION BY GRADE BASED ON VISUAL ESTIMATE AND/OR CHEMICAL ASSAY OR GAMMA-RAY DATA) AND THICKNESS. DRILL HOLES LOCATED BY TAPE AND COMPASS SURVEY METHODS. (NUMBERS ON DIAMOND-DRILL HOLE STANDPIPES AND STAKES IN FIELD HAVE PREFIX 'CC'; NUMBERS ON WAGON-DRILL HOLE STANDPIPES AND STAKES IN FIELD HAVE PREFIX 'WY')
 - BARREN
 - WEAKLY MINERALIZED (CONTAINS LESS THAN 0.10% U₃O₈ AND 1.0% V₂O₅ BUT 0.020% OR MORE U₃O₈ OR 0.10% OR MORE V₂O₅ BY VISUAL ESTIMATE AND/OR CHEMICAL ASSAY, OR REGISTERS GAMMA-RAY VALUES WITHIN THE RANGE FROM 0.020% TO 0.099% W₂O₈ OR LESS THAN 1 FOOT THICK IF HIGHER GRADE)
 - ORE-BEARING (CONTAINS 0.10% OR MORE U₃O₈ OR 1.0% OR MORE V₂O₅ BY VISUAL ESTIMATE AND/OR CHEMICAL ASSAY, OR REGISTERS GAMMA-RAY VALUES OF 0.10% OR MORE W₂O₈ AND 1 FOOT OR MORE THICK)

Figure 1. MAP OF THE YELLOW CAT AREA, GRAND COUNTY, UTAH

